

(b) shaft extensions secured to the shaft by slot means for removing the shaft extensions when the mixing chamber is emptied and the shaft is stopped, the slot means comprising a single rectangle slot located at a base of the shaft extensions where a forward edge of the slot in the direction of rotation of the shaft has a relatively smooth transition to an outside surface of the shaft and a rearward edge of the slot is substantially stepped down from the outside surface of the shaft;

(c) a door located substantially spaced apart from and between the ends of the mixing chamber and along a bottom surface of the mixing chamber; and

(d) the door being adapted to open after the feed material is mostly melted and mixed together so that the feed material can drop from the mixing chamber.

10. (Thrice amended) A thermokinetic mixer comprising:

(a) a substantially cylindrical mixing chamber with an inside surface enclosing a shaft connected with a motor driver outside the mixing chamber and rotatable at relatively high speed substantially about an axis of the cylindrical mixing chamber, the mixing chamber having an opening at a first end of the cylinder that communicates with a screw feeder, where the screw feeder comprises screw blades mounted on an extension of the shaft and are enclosed with a cylindrical housing open at an inlet port, the screw feeder being adapted to receive a particulate feed material comprising an effective amount of particles of polymers meltable at operating conditions and to deliver the feed material to the mixing chamber during rotation of the shaft;

(b) four or more shaft extension rows equidistantly spaced around the length of the shaft in the mixing chamber, where each shaft extension row consists of three or more shaft extensions arranged in a row lengthwise on and extending radially from the shaft, each shaft extension comprising a major tooth face oriented such that during rotation of the shaft the major tooth face passes through a plane including the shaft axis first at a sharp leading edge and thereafter only along a substantially flat or slightly curved surface extending from the leading edge rearward from the leading edge and at an angle of from 20 degrees to 70